STRONG
DIGITAL TV

Picture similar

# Digital Terrestrial Twin Tuner Receiver SRT 5220

## User Manual

**SRT 5220**

Fig. 1

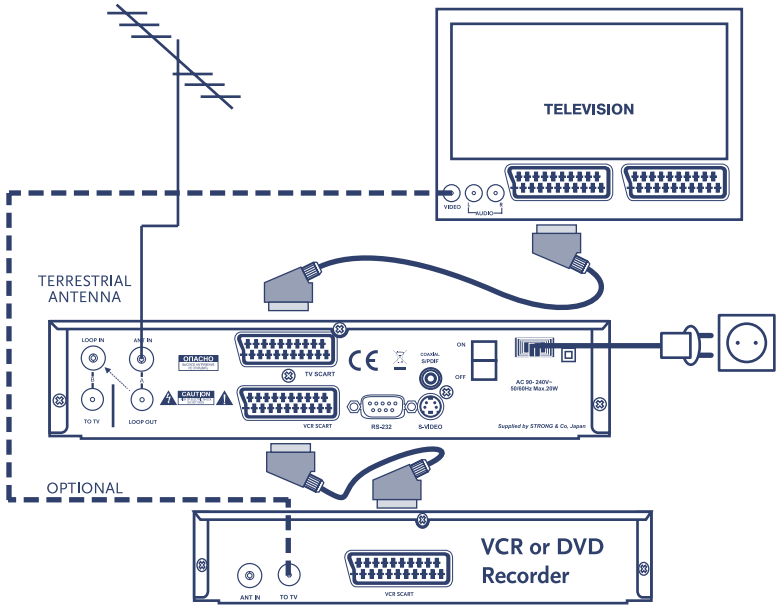



Fig. 2

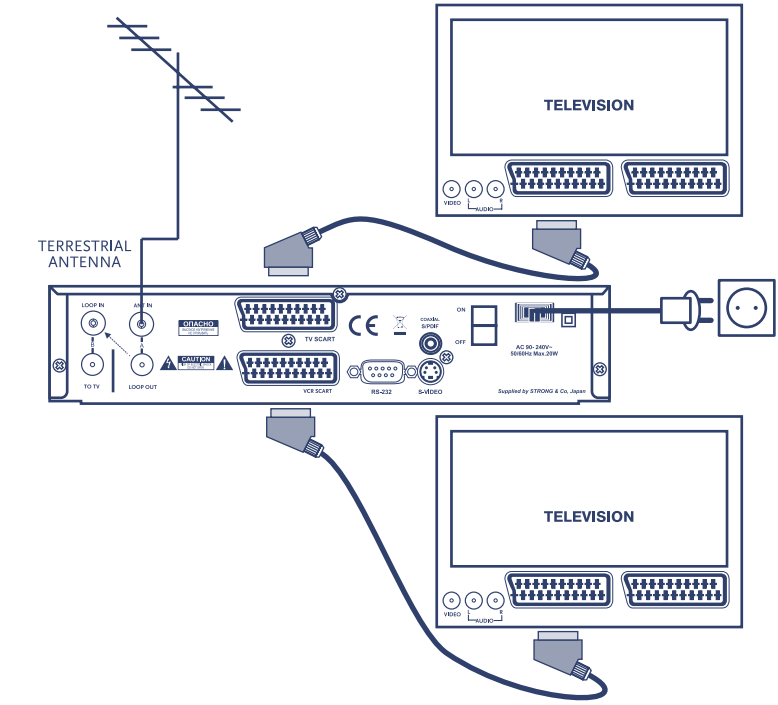


Fig. 3

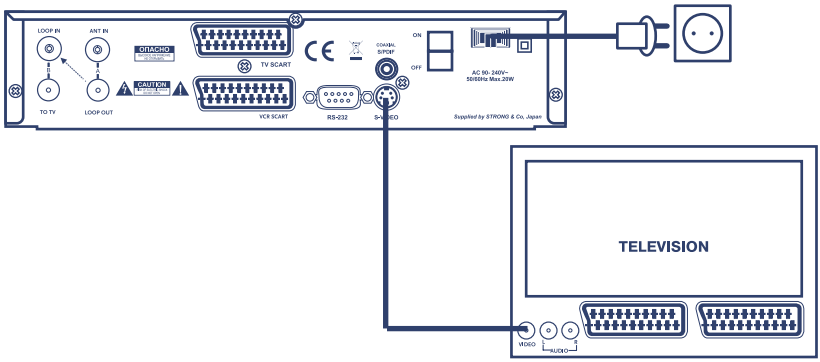



Fig. 4

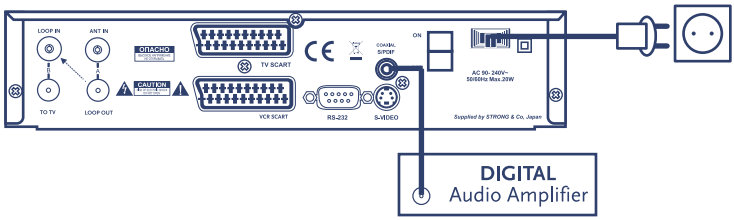



Fig. 5

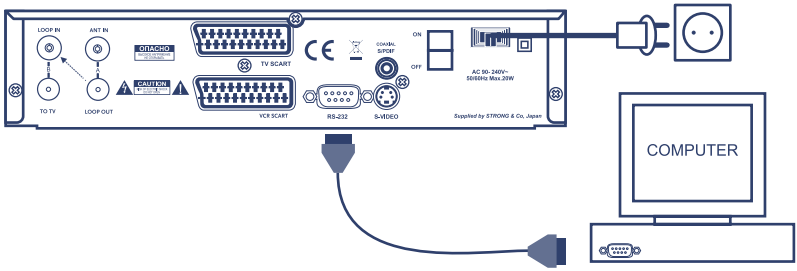
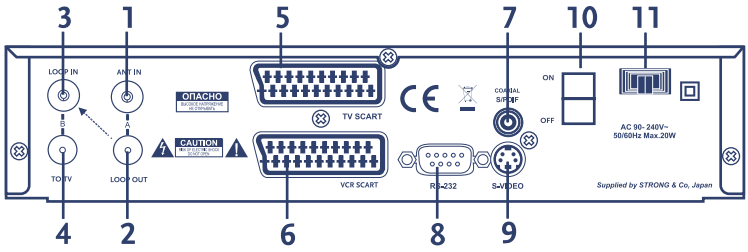



Fig. 6

Fig. 7



STRONG DIGITAL TV

English

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HOTLINE
0180 500 75 43*
* €0.14/Min. from German wired line
0820 400 150*
* €0.12/Min. from Austrian wired line
per January 2007

# 1.0 INSTRUCTION

## 1.1 Safety Instructions

**DO NOT INSTALL YOUR RECEIVER**:

- In a closed or poorly ventilated cabinet; directly on top of or under any another equipment; on a surface which might obstruct the ventilation slots

**DO NOT EXPOSE THE RECEIVER OR ITS ACCESSORIES**:

- To direct sunlight or near any other equipment that generates heat; to rain or intense moisture; to intense vibration and to any shock which may cause permanent damage to your receiver or to any magnetic objects, such as loudspeakers, transformers, etc.
- Do not use a damaged power cord. It may cause a fire or an electrical shock. Do not touch a power cord with wet hands. It may cause an electric shock
- Never open the cover. It is dangerous to touch the inside of the receiver due to high voltage currents and possible electrical hazards. Your warranty will be void if the receiver has been opened
- When the receiver is not used for a long period of time, you should unplug the power cord from the wall socket
- Do not use alcohol or ammonia based liquids to clean the receiver. If you wish, you may clean your receiver with a soft lint-free cloth slightly made damp with a mild soap solution, only after disconnecting from the mains voltage supply. Make sure no foreign objects fall through the ventilation slots because this could cause fire or an electric shock
- Do not place any objects on top of the receiver because this might prevent proper cooling of the components inside

**SAFETY PRECAUTIONS**

- Do not open the receiver cover, as you will be exposed to a shock hazard. It will also void your warranty. Refer all maintenance or servicing to suitably qualified personnel
- When you are connecting the cables, be sure that the receiver is disconnected from the mains supply voltage. Wait a few seconds after switching off the receiver before you move the receiver or disconnect any equipment.
- It is a necessity that you only use an approved extension and compatible wiring that is suitable for the electrical power consumption of the installed equipment. Please ensure that the electrical power supply corresponds with the voltage on the electrical identification plate at the back of the receiver

If the receiver does not operate normal even after strictly following the instructions of this user manual, it is recommended to consult your dealer.

## 1.2 Storage

Your receiver and its accessories are stored and delivered in a packaging, protected against electric damage and moisture. When unpacking, make sure all parts are included. Keep packaging away from children. For transportation from one place to another or if you are returning the receiver under warranty make sure it is repacked in its original packaging with all accessories. Failing to comply with such packaging procedures could void your warranty.

## 1.3 Equipment Set-up

We recommend you consult a professional installer to set up your equipment. Otherwise, please follow these instructions carefully:

- Refer to the user manual of your TV and your antenna.
- Make sure that the SCART cable and outdoor components of the antenna are in a good condition and the SCART connections are well shielded.

This manual provides complete instructions for installing and using this receiver.
The following symbols will serve as follow.

**Warning** Indicates warning information.

**Tips** Indicates any other additional important or helpful information.

**MENU** Represents a button on the remote control or the receiver

*Move to* Represents a menu item within a window

## 1.4 Features & Accessories

- For all digital Free-To-Air TV and Radio programmes (with outdoor- or indoor* antenna)
- Twin Tuner Technology: Watch one programme while simultaneously recording another one on your Video or DVD Recorder
- 1 000 channels memory capacity
- Display showing channel number or time
- Favourite list for TV and Radio programmes
- Quick and easy installation & user-friendly menu
- Mosaic function: 9 TV Channels in overview
- Excellent Audio- and Video quality
- Digital Sound through coaxial output (S/PDIF)
- Set-up support for first time installation
- Electronic Programme Guide (EPG) for present / following event information and up to 7 days for on screen programme information
- Advanced timer function – easy recording of your favourite TV or Radio programme once, daily or weekly
- Support Teletext via OSD and VBI
- Multi-lingual subtitling and audio track support
- Multilingual OSD on-screen menu
- Parental lock function for menu and selectable per channel
- High speed channel zapping
- Automatic and manual channel scan options
- User-friendly Remote Control
- Low power consumption
- Separate power switch
- RS-232 port for updating control software
- Games (Mine, Tetris, Gomoku)
- DVB-T compliant, UHF/ VHF Tuner with Loop-through function
- Support of active antenna by 5 V output
- **Connections**: ANT IN, LOOP IN, LOOP OUT, TO TV, 2 SCARTs (TV/ VCR), S/PDIF, S-VIDEO, Serial Port RS-232, Power switch
- **Accessories**: User Manual, Remote control, 2x Batteries (AAA), Short RF (coax lead) cable

* Subject of local broadcast condition

**NOTE**: The batteries should not be recharged, disassembled, electrically short-circuited or be mixed or used with other types of batteries.

# 2.0 CONNECTION

## 2.1 Connecting to Terrestrial Antenna

To receive the broadcast signal, the terrestrial antenna cable should be connected to the ANT IN connector at the back of the receiver. Connect the LOOP OUT to the LOOP IN with the short RF-Coax cable (fig. 1).

## 2.2 Connecting to TV with SCART cable

Connect the TV set to the TV SCART connector of the receiver through a SCART cable (fig. 1).

## 2.3 Connecting to Video/DVD Recorder with SCART cable

This terrestrial receiver may also be operated together with a Video or DVD recorder. (fig. 1).
Connect your Video/DVD Recorder through a SCART cable on VCR SCART.
The signals from Video/DVD Recorder will pass to your TV-set if this terrestrial receiver is powered off or the **AV** button on remote control is pressed.

**Optional:** using coaxial cable, connect TO TV output of the receiver to aerial input of your VCR and aerial output of VCR to aerial input of your TV set. This will allow you to watch and record analogue aerial programs to your VCR.

## 2.4 Connecting to TV with S-VIDEO cable

On the back of your receiver you will find the S-VIDEO connector. Install an S- VIDEO cable between connector of the receiver and the one of your TV set. This S-VIDEO output is connected to the same tuner as TV SCART.

**NOTE**: This output supports only video. Please set to S-VIDEO in menu System settings > Video Output. If RGB mode is selected this output is not active. (Fig. 3)

## 2.5 Connecting to a Digital Audio Amplifier

The Digital Audio Amplifier is connected with the receiver from the S/PDIF connector (fig. 4)

## 2.6 Connecting to PC

The RS-232 connector on the receiver is to connect to the PC using a serial cable (fig. 5). This allows you to download new versions of software to your receiver.

# 3.0 YOUR RECEIVER

## 3.1 Front Panel

**Fig. 6**

1. **Power ON/STAND-BY button**
2. **MENU**
   By pressing this button you'll open the OSD menu
3. **OK**
   By pressing this button, you'll confirm a selection
4. **Mode indicator**
   The RED light indicates that the receiver is in STAND-BY mode. The GREEN light indicates that the receiver is in AWAKE mode.
5. **4 digits display**
   In STAND-BY mode indicates current time
   In AWAKE mode indicates current channel number
   In Extern/TV mode it shows AV
6. **Channel Up/Down buttons**
   In TV mode: channel up/down
   In OSD: menu up/down
7. **Volume buttons left/right**
   In TV mode: volume up/down
   In OSD: page up/down or depending on option

## 3.2 Rear Panel

**Fig. 7**

1. **ANT IN**
   To connect a digital aerial antenna for receiving broadcasting signal.
2. **LOOP OUT**
   To connect a short RF cable to LOOP IN
3. **LOOP IN**
   To connect a short RF cable to LOOP OUT
4. **TO TV**
   To connect an extra receiver or TV set (see chapter 2.3)
5. **TV SCART Connector**
   To connect your receiver with your TV set using a SCART cable.
6. **VCR SCART Connector**
   **Option 1**: To connect your receiver with your VCR using a SCART cable.
   **Option 2**: To connect your receiver with your DVD recorder using a SCART cable.
   **Option 3**: To connect your second TV set using a SCART cable.
7. **Coax S/PDIF (BLACK RCA)**
   To connect your receiver to digital audio amplifier

8. **RS-232 Serial Port**
   Connect a PC to your receiver to download new software versions.
9. **S-VIDEO**
   To connect to your TV set
10. **Main power switch**
11. **Power Cord**
    Your receiver requires a current of 90 ~ 240 V AC (Auto-selectable), 50 ~ 60 Hz +/-5 %. Make sure to check the power specification before connecting your receiver to the wall outlet.



## 3.3 Remote Control

| | |
|---|---|
| | Turns the receiver On/Standby |
| | Mutes audio output of the receiver |
| **PAUSE** | Freeze/Resume picture |
| **AUDIO** | Shows list of available audio languages for the channel you are watching. In addition it sets the current channel audio to stereo, left-double mono or right-double mono |
| **MENU** | Opens the main menu |
| **A->B** | To transfer selected TV program from 1st to 2nd tuner (e.g. for recording and watching another programme on the 1st tuner) |
| **A/B** | To switch between tuner 1 and tuner 2. Show running program on TV SCART output from VCR SCART / 2nd tuner. (disables all other buttons when this mode is active) |
| **INFO** | Shows information of the current channel |
| **P+ / P-** | Page up and down in menu list |
| **EXIT** | Exits from the menu or sub-menu and cancels the progressing function if applicable |
| **CHANNEL ▲▼** | Menu Off: Change the current program to the previous/next program.<br>Menu On: Moves the cursor up/down. |
| **◀▶** | Menu Off: Increases/decreases the volume level.<br>Menu On: Change the setting values in specific Menu item |
| **V+ / V-** | Use to increase or decrease the receiver volume level. |
| **OK** | Activates the highlighted menu item. Displays a channel list according to TV /Radio Mode |
| **TEXT** | Shows current service's Teletext on OSD (On Screen Display) |
| **SUB** | Show list of subtitled languages current channel is supporting |
| **RCL** | Switches back to previous channel |
| **FAV** | Toggle Favourite mode ON / OFF |
| **TV/R** | Toggle between TV or RADIO mode |

**EPG** Shows the EPG (Electronic Program Guide) during No-menu state only
**0 ~ 9** Channel selection
**MOSAIC** Show pictures up to 9 channels on the screen( depends on Broadcaster support)
**AV** Toggle between TV and AV mode

## 4.0 FIRST TIME INSTALLATION

Make sure your terrestrial receiver is connected correctly to your TV and terrestrial antenna and the signal quality is good enough. Confirm the power plug of the receiver is plugged into the wall outlet. Turn on the receiver.
It is recommended to perform the first time installation following the Installation Wizard step by step. This will help you to easily achieve system configuration and channel installation. If you are a professional installer then you can skip the wizard by pressing **EXIT** button and set-up the channels using the *Channel Search* menu.

1. You are asked to Select a Language out of the list.
   Press **UP/DOWN** to choose your language, press **OK** to confirm.

2. The *Preference Menu* will appear.
   Please select your *Country*, *Antenna Power mode* and *Channel numbering*. Press **UP/DOWN** to select the items, press **RIGHT/LEFT** to change the value of the item. If you choose *BACK*, it will go back to the previous menu screen. Press **OK** to confirm.

3, You enter the *Adjust antenna* menu.
   Press **LEFT**/ **RIGHT** to select *Channel No*, adjust your antenna direction and position (if necessary) to get maximum levels on the signal level and quality indicators. You can check with your dealer on which channels digital terrestrial broadcast is available at your location. Move cursor to *Scan*, press **OK** to confirm, The *Automatic Search* screen will appear. On completing the search, the receiver will save services information automatically and exit to normal play state.

# 5.0 MAIN MENU

All the important settings and features of your receiver can be operated in Main Menu. With Menu off, press **MENU** key. The *MAIN MENU* screen will appear. It consists of five sub-menus: "*Channel Organiser*", "*Channel Search*", "*Installation*", "*Timer*" and "*Game*".

## 5.1 Channel Organiser

In *MAIN MENU* screen, press **UP**/**DOWN** to move the cursor to *Channel Organiser*, and press **OK** to enter the *Channel Organiser* menu.

The Channel Organiser menu consists of three sub-menus: "*Edit TV Channel*", "*Edit Radio Channel*" and "*Sort*".

### 5.1.1 Edit TV channel

In this menu, you can set the favourite channels, change the order of the channels and delete channels. Press **UP**/**DOWN** keys to point the focus of the menu to the channel of your selection. Press **LEFT**/**RIGHT** keys to point the focus of the menu to the column with the function, which you want to apply to the selected channel. When the focus is on column "*Favour*", press **OK** to add the selected channel to the Favourite list.
When the focus is on column "*Move*", press **OK** to confirm channel selection. Using **UP**/**DOWN** moves the channel to the new location and press **OK** to confirm. Repeat this for every channel you want to move.
When the focus is on column "*Del*", press **OK** to mark the channel to be deleted from the list. To apply changes, press **EXIT** and confirm channel deletion.

### 5.1.2 Edit Radio Channels

This menu is similar to 5.1.1 "*Edit TV Channels*" description.

### 5.1.3 Sort

You can sort the order of the channel list by *Channel Name*, *LCN* (Logical Channel Number) or *Channel Number*.

## 5.2 Channel Search

There are 2 items in the *Channel Search* menu: *Automatic Search* and *Manual Search*

### 5.2.1 Automatic Search

Press **OK** over the *Automatic Search*.
The warning message "*Do you want to start Automatic Search?*" will appear. Press **LEFT**/**RIGHT** to move the cursor and **OK** to continue. The message "*Please press* **LEFT/RIGHT** *to choose whether to erase your previous channel list*." will appear. If you want to cancel channel search press the **EXIT** button.
On completing the search, the receiver will save automatically the services information and exit to normal play state.

### 5.2.2 Manual Search

Press **OK** over the Manual Search, the Manual Search screen will appear.
Press **LEFT**/**RIGHT** to choose channel No. or press numerical buttons to input channel number. Check indicators of the signal level and quality to make sure the values are entered correctly. Press **UP**/**DOWN** to move cursor to *Search* and press **OK** to search current channel. If no service is installed, there will be the warning "*No Signal*". Press any key to return.

**Tips** Different countries have different VHF/UHF frequency plans. It is important to select the proper region.

## 5.3 Installation

### 5.3.1 System Setting

In this menu, you can configure the system settings *Language*, *TV Settings*, *Country*, *Channel Numbering*, *Antenna Power*, *Time Settings*, and *Factory Default*.

#### 5.3.1.1 Language

You can change the language of the OSD and Audio.
Press **UP**/**DOWN** to select the *OSD Language* or *Audio language*.
Press **OK**/**RIGHT** to enter the language list and Press **UP**/**DOWN** to select the language. Press **OK** to confirm.

#### 5.3.1.2 TV Settings

You can set *TV Standard*, *TV Format* and *Video Output*.

- TV Standard
  Press **OK**/**RIGHT** to select *PAL* or *NTSC* and **OK** to confirm. If you don't know which standard your TV has, please select *AUTO*.
- TV Format
  Press **OK**/**RIGHT** to select *4:3*, *4:3 Full* or *16:9*, and **OK** to confirm.
- Video Output
  Press **OK**/**RIGHT** to select *CVBS*, *RGB* or *S-VIDEO*, and **OK** to confirm

#### 5.3.1.3 Country

Press **OK**/**RIGHT** to select your country, press **OK** to confirm. If your country is not in the list, select *Other*. It will apply the most common frequency plan for European countries.

#### 5.3.1.4 Channel Numbering

Here you can set the channel list by different number format: *Appearing order* or *Operator defined*.

#### 5.3.1.5 Antenna Power

Press **OK**/**RIGHT** to select turn *OFF* or *ON* the antenna power, press **OK** to confirm. Before setting the *Antenna Power* to *ON*: make sure your antenna is ACTIVE, requires power 5 V DC and it's power consumption is not more then 100 mA.

#### 5.3.1.6 Time Settings

If a broadcaster provides GMT, you can set the time using GMT, or set time by yourself.

- If the *GMT usage* is *ON* then the Current time is set automatically or you can set the time zone. If your broadcaster provides the correct time offset then your receiver will change from summertime to wintertime automatically.
- If you set *GMT Usage* to *OFF*, *Set Date* and *Set Time* item are displayed. To set the time value manually, move the cursor to the time item and use the numeric buttons on the remote control.

#### 5.3.1.7 Factory Default

Select Factory default and press **OK**. Select *YES* and for the warning "*Do you want to set factory default?*" press **OK**, then the receiver will return to its factory default state, and all user data will be deleted.

### 5.3.2 Personal Style

In this menu, you can set the *Menu Colour*, *Transparency Level*, *Border Pattern*.
Press **UP**/**DOWN** to select the item, and Press **LEFT**/**RIGHT** to set the value and **OK** to confirm.

### 5.3.3 Parental Control

In this menu, you can set *Channel Lock* status (*ON* or *OFF*), the *Menu Lock* status, *Parental Setting* and change the *PIN Code*.
**The default PIN code is 0000**.

#### 5.3.3.1 Channel Lock

Set the system *Channel Lock* to *ON* or *OFF*. If the channel lock is *ON*, the parental PIN code has to be entered correctly before watching the locked channel.

#### 5.3.3.2 Menu Lock

Press *YES* or *NO*, whether you want to lock the Menu or not and press **OK** to confirm. If the menu lock is on, you need to enter your PIN for operations such as search program and set factory default.

#### 5.3.3.3 Parental Setting

Set some programs to lock status. If a program is locked, the parental PIN code has to be entered correctly before watching the locked program. Use **UP**/**DOWN** keys to select the channel you want to lock and press **OK** to confirm.

#### 5.3.3.4 Change PIN

PIN is Personal Identification Number. To modify the password, you need to enter the current PIN, a new 4 digit password and once again the new one for confirmation; the system password will be changed then.

### 5.3.4 System Information.

Displays the software version information. Press **OK**/**EXIT** keys to return.

### 5.3.5 Update through PC to STB

1. Connect Computer to receiver (receiver must be power off) with a 9-pin cross cable (two females)
2. Download the specially STBload tool for SRT 5220 from www.strong.tv website.
3. Read the instructions how to load new software it to your receiver.

**NOTE: INCORRECT OPERATION MAY CAUSE UNREPAIRABLE DAMAGE TO THE RECEIVER.**

1. Do NEVER use HyperTerminal to download software.
2. DO NOT POWER OFF THE RECEIVER DURING THE PROCESS OF DOWNLOADING. Wait until “Burn **OK**” is shown.
3. DO NOT PLUG IN OR UNPLUG THE RS232 INTERFACE WHEN RECEIVER IS POWERED ON.

## 5.4 Timer

Timer functions control only the VCR SCART output/ 2nd tuner. The TV SCART output/ 1st tuner is "Free" to use during Timer is running.
Timer starts 2nd tuner while 1st tuner is in Stand-by mode.

Use **UP**/**DOWN** buttons to select a timer. Press **LEFT**/**RIGHT** to activate/switch off current timer. Press **OK** to enter selected timer settings.
You can select from the following functions:

| | |
|---|---|
| "*Power On*": | The 2nd tuner powers on at the designated date and time. (no indication on front panel, it keeps in standby mode) |
| "*Time interval*": | The 2nd tuner switches on at the designated date and time, displays the channel and then switches off at the designated date and time (The value set at the end time). |
| "*Power Off*": | The 2nd tuner powers off at the designated date and time. |
| *Cycle*: | You can set the cycle of the action designated in the timer mode (one time, Daily or Weekly). |
| *Start Date*: | You can set the start date of the timer action. |
| *Start Time*: | You can set the start time of the timer action. |
| *End Time*: | You can set the end time of the channel view when the Timer mode is on Time Interval. |
| *Channel Type*: | select between TV and Radio. |
| *Channel Name*: | Press Right button to display channel list and using navigation buttons to select channel to be shown when the 2nd tuner will power on by timer. |

## 5.5 Game

The receiver has a calendar and three games (Mine, Tetris and Gomoku). Select a game and press **OK** for playing.

**5.5.1 Mine**
**UP** / **DOWN** / **LEFT** / **RIGHT** button: Move the cursor.
**MENU** button: To mark the mine.

**5.5.2 Tetris**
**LEFT** / **RIGHT**: Move block to left or right direction.
**DOWN**: drop block.
**UP**: Rotate block.

**5.5.3 Gomoku**
**UP** / **DOWN** / **LEFT** / **RIGHT**: Move the cursor.
**OK**: Place the gobang.

**5.5.4 Calendar**
**UP** / **DOWN**: +/- months.
**LEFT** / **RIGHT**: +/- years the range from 1900 to 2100.

# 6.0 OTHER OPERATIONS

## 6.1 Mosaic

In no-menu state, press **MOSAIC** button. Screen will be divided into nine pictures.

- Press **UP** / **DOWN**/ **LEFT** / **RIGHT** keys to choose one of current programs
- Press **P+** / **P-** keys to view another nine programs
- Press **OK** key to return to normal play state and play the selected program
- Press **EXIT** key to return normal play state and change nothing

## 6.2 EPG

EPG (Electronic Program Guide) is transmitted by broadcasters to display information about program content.
In no-menu state, press **EPG**, *EPG* Menu will appear:
Press **UP** / **DOWN** to choose channel. Press **RIGHT** to enter EPG schedules of current channel.

1. In *EPG schedules* menu:
   Press **UP** / **DOWN** keys to choose schedule items. Press **P+** / **P-** into next / previous day schedules. Press **LEFT**/**EXIT** return to *EPG* Menu. Press **OK**/**RIGHT** to show the details of this item.
2. In *EPG schedule details*:
   Press **P+** / **P-** into next / previous page. Press **LEFT**/**EXIT** return to *EPG schedule* Menu. You can set up the event timer by pressing **OK** in *EPG schedule details* or *EPG schedule* screen.
3. To set up an event timer:
   Press **UP**/**DOWN** to move the cursor to the event for which you want to add a timer. Press **OK** to add a timer. To quit event timer setup, press **EXIT**.

## 6.3 Teletext

In no-menu state, press **TEXT**. Press **UP** / **DOWN** to move up or down from the displayed page number. Press Numeric keys to input page directly. If the current program has no Teletext, you'll see the message "*Teletext no data – Press any key to exit*".

## 6.4 Subtitles

In no-menu state, press **SUB**. Press **LEFT**/**RIGHT** to select between teletext and dvb subtitles. Use **UP**/**DOWN** to select subtitles language. Confirm your selection with **OK** button.

## 6.5 Information

When you press **INFO** key twice in the no-menu state, the screen will show you current channel information.

## A.1 TROUBLESHOOTING

Before requesting service, please check the table for a possible cause of the problem. Some simple checks or minor adjustments may restore proper operation. The most common problems are related to cable connections, please disconnect and connect all cables again. If none of the below indicated remedies solve the problem, consult your vendor.

| Symptom | Remedy |
|---|---|
| **Installation** | |
| Decoder does not find channels | If you are using a directional aerial, make sure it is directed towards a digital TV transmitter and positioned correctly.<br><br>Make sure it is possible to receive digital terrestrial signal in your area.<br><br>It is advisable to use a standard outdoor aerial, which normally have better specifications than an indoor one.<br><br>Check the cable of the aerial.<br><br>If you cannot solve the problem easily have your aerial and installation tested by a professional. |
| **General** | |
| Standby indicator on front panel does not light up | Check if power is available at the wall socket. Check if the SCART cable and antenna cable are correctly connected and the receiver is switched on. Disconnect these cables, and reconnect them to ensure they are in place |
| Standby indicator on front panel is red | Your receiver is in standby, press the power button on front panel or your remote control |
| Remote control fails to operate receiver | Check the batteries in your remote control. Make sure your receiver is in the operate mode. Make sure you are pointing your remote control at the receiver's front panel<br><br>Make sure there is no direct sunlight from behind the receiver.<br><br>There may be a temporary transmission error, or your receiver has lost some of its software settings. Switch off your receiver at the power source and switch it on again after a few seconds. |
| No program broadcast recorded on VCR | Check the connection between receiver and VCR. Please make sure your VCR is set properly |
| No program /broadcast on VCR | Check the connection on rear of receiver between LOOP OUT and LOOP IN. These must be connected with a short COAX cable |
| No program /broadcast on VCR | Press the A > B button on your remote control to start running program from TV SCART |
| **Electronic Program Guide (EPG)** | |
| EPG empty | The selected program does not support EPG. The local time is incorrect. Set the correct local time |

| Symptom | Remedy |
|---|---|
| **Audio & video issues** | |
| TV Picture changes colour | This may happen after a power-cut or disconnection from the power source. Your receiver has lost some software settings. Switch off your receiver and on again after a few seconds. If the problem persists, contact your vendor. |
| Blocks in the TV picture | The signal is too weak or defective due to e.g. bad weather conditions. Try to adjust your aerial position or wait for the signal to be re-established. |

## A.2 SPECIFICATIONS

**Demodulator**

| | |
|---|---|
| Demodulator: | COFDM; 16 QAM/64 QAM |
| Transmission mode: | 2 K ~ 8 K |

**Video Decoder**

| | |
|---|---|
| Profile level: | MPEG-2 MP@ML |
| Video resolution: | 720 x 576 pixels (PAL), 720 x 480 (NTSC) |
| Decoding & Video Out: | PAL & NTSC |
| Aspect ratio: | 4:3, 4:3 FULL, 16:9 |

**Audio Decoder**

| | |
|---|---|
| MPEG MusiCam Layer I & II | |
| Sampling rate: | 32, 44.1, 48 kHz |
| Audio mode: | Stereo, Joint Stereo, Dual Mono |

**Tuner**

| | |
|---|---|
| Front End: | DVB-T, UHF & VHF Tuner |
| Input frequency range: | 174 ~ 470 MHz (VHF) and 470 ~ 862 MHz (UHF) |
| Loop through frequency range: | 47~862 MHz |
| Input signal level: | -82 ~-20 dBm |

**Memory and System**

| | |
|---|---|
| Flash memory: | 8 Mbits |
| SDRAM: | 64 Mbits |

**Connectors**

| | |
|---|---|
| ANT input: | IEC Female |
| LOOP IN | |
| LOOP OUT | |
| TO TV: | IEC Male |
| TV SCART: | supports RGB, CVBS, Audio Left/Right Output with Volume Control |
| VCR SCART: | supports CVBS, Audio Left/Right Output |
| S-VIDEO output (1nd tuner) | |
| Coax S/PDIF (Black) | |
| Data Interface- serial port: | RS-232, 9-Pin D-Sub Male type |

**General Data**

| | |
|---|---|
| Supply Voltage: | 90 ~ 240 V AC (SMPS), 50/60 Hz |
| Power Consumption (max): | 20 W |
| Standby Power Consumption: | < 10 W |
| Operating Temperature: | 0 ~ 40 °C |
| Storage Temperature: | -30 ~ 80 °C |
| Operating Humidity Range: | 10 ~ 85%, RH, Non-condensing |
| Net-weight: | 1.53 kg |
| Size (W x D x H) in mm: | 280 x 235 x 60 |

## A.3 GLOSSARY OF TERMS

| | |
|---|---|
| DVB-T | Digital Video Broadcasting Terrestrial – Digital TV via antenna (same as DTT- Digital Terrestrial Television). |
| MPEG | Moving Picture Experts Group is founded by the ISO. MPEG is a standard method for digital transmission of video and audio. |
| Network | Also known as bouquet is a set of channels offered by a single broadcaster. |
| PAL | Phase Alternate Line colour system adopted by European broadcasters. |
| PID | The transmitted packages have identifiers (PID) telling the receiver what to do with the received information. Receivers normally use four types of PID, these are V-PID (video PID), A-PID (audio PID), P-PID (Program PID) and data PID (EPG information). |
| RS-232 | Serial data port. |